

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Keith Kang and John Trezza

Serial No.: To Be Assigned

Prior Group Art Unit: 2839

Filed: April 2, 2004

Prior Examiner: Khiem M. Nguyen

For: INTEGRATION OF FUSED GLASS COLLIMATED
COUPLER FOR USE IN OPTO-ELECTRONIC MODULES

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir:

This Information Disclosure Statement is filed in accordance with 37 C.F.R. §§1.56, 1.97 and 1.98. The items listed on Form PTO-1449, a copy of which is enclosed, are made of record to assist the Patent and Trademark Office in its examination of this application. The Examiner is respectfully requested to fully consider the items and to independently ascertain their teaching.

1. ☐ For each of the following items listed on the enclosed copy of Form PTO-1449 that is not in the English language, an English language translation of that item or a portion thereof or a concise explanation of the relevance of that item is enclosed:

2. ☐ For each of the items listed on the enclosed copy of Form PTO-1449 that is not in the English language, a concise explanation of the relevance of that item is incorporated in the specification of the above-identified application.
3. ☒ All items listed on the enclosed copy of Form PTO-1449 were previously cited by or submitted to the Patent and Trademark Office in application Serial No. 10/180,239, filed 6/26/2002 to which the present application claims the benefit of priority under 35 U.S.C. §120. Pursuant to 37 C.F.R. §1.98(d)(1) and (2) copies of such references need not be provided.


4. ☒ **No fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with:**
- ☒ **37 C.F.R. §1.97(b)(1), within three months of the filing date of a national application other than a CPA; or**
 - ☐ 37 C.F.R. §1.97(b)(2), within three months of the date of entry into the national stage as set forth in §1.491 in an international application; or
 - ☒ **37 C.F.R. §1.97(b)(3), before the mailing date of a first Office action on the merits; or**
 - ☐ 37 C.F.R. §1.97(b)(4) before the mailing date of a first Office Action after the filing of an RCE under §1.114.
5. ☐ No fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(c), after the period specified in paragraph 4 above but before the mailing date of a final action or a Notice of Allowance (where there has been no prior final action), and is accompanied by one of the certifications pursuant to 37 C.F.R. §1.97(e) set forth in paragraph 9 below.
6. ☐ A fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(c), after the period specified in paragraph 4 above but before the mailing date of a final action or a notice of allowance (where there has been no prior final action):
- ☐ A check in the amount of \$180.00 is enclosed in payment of the fee.
 - ☐ Charge the fee to Deposit Account No. 13-4500, Order No. _____.
A DUPLICATE COPY OF THIS SHEET IS ATTACHED.
7. ☐ A fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(d), after the mailing date of a final action or a notice of allowance, whichever comes first, but before payment of the issue fee, and is accompanied by:
- a. one of the certifications pursuant to 37 C.F.R. §1.97(e) set forth in paragraph 9 below; and
 - b. the fee due under 37 C.F.R. §1.17(p) which is paid as set forth in paragraph 11 below.
8. ☐ A fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with:
- a. ☐ 37 C.F.R. §1.313(b)(3) or §1.313(c)(1), after the issue fee has been paid and information cited in this Information Disclosure Statement may render at least one claim unpatentable and is accompanied by the attached Petition To Withdraw Application From Issue and fee pursuant to 37 C.F.R. §1.17(h);

- b. ☐ 37 C.F.R. §1.313(c)(2) or §1.313(c)(3), after the issue fee has been paid and information cited in this Information Disclosure Statement is to be considered in a Request for Continued Examination (RCE) or a Continuation application upon abandonment of the instant application and is accompanied by the attached Petition To Withdraw Application From Issue and fee pursuant to 37 C.F.R. §1.17(h).
- c. ☐ The fees due under 37 C.F.R. §§1.17(h) and 1.17(p) are paid as set forth in paragraph 11 below.
9. ☐ I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- ☐ I hereby certify that no item of information in the Information Disclosure Statement filed herewith was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.
10. ☐ This document is accompanied by ☐ a Search Report ☐ Communication which was cited in a corresponding ☐ PCT or ☐ Foreign counterpart application
11. ☐ A check in the amount of \$_____ is enclosed in payment of the fees due under 37 C.F.R. §§1.17(h) and 1.17(p).
- ☐ Charge the fees due under 37 C.F.R. §§1.17(h) and 1.17(p) to Deposit Account No. 13-4500, Order No. 4024-4020. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required for this Information Disclosure Statement, or credit any overpayment to Deposit Account No. 13-4500, Order No. 4024-4011US2. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

Respectfully submitted,

MORGAN & FINNEGAN, L.L.P.

By:


Richard Straussman
Registration No. 39,847

Dated: April 2, 2004

Correspondence Address:
MORGAN & FINNEGAN, L.L.P.
345 Park Avenue
New York, NY 10154-0053
(212) 758-4800 Telephone
(212) 751-6849 Facsimile

- b. ☐ 37 C.F.R. §1.313(c)(2) or §1.313(c)(3), after the issue fee has been paid and information cited in this Information Disclosure Statement is to be considered in a Request for Continued Examination (RCE) or a Continuation application upon abandonment of the instant application and is accompanied by the attached Petition To Withdraw Application From Issue and fee pursuant to 37 C.F.R. §1.17(h).
- c. ☐ The fees due under 37 C.F.R. §§1.17(h) and 1.17(p) are paid as set forth in paragraph 11 below.
9. ☐ I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- ☐ I hereby certify that no item of information in the Information Disclosure Statement filed herewith was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.
10. ☐ This document is accompanied by ☐ a Search Report ☐ Communication which was cited in a corresponding ☐ PCT or ☐ Foreign counterpart application
11. ☐ A check in the amount of \$ _____ is enclosed in payment of the fees due under 37 C.F.R. §§1.17(h) and 1.17(p).
- ☐ Charge the fees due under 37 C.F.R. §§1.17(h) and 1.17(p) to Deposit Account No. 13-4500, Order No. 4024-4020. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.
- ☒ **The Commissioner is hereby authorized to charge any additional fees which may be required for this Information Disclosure Statement, or credit any overpayment to Deposit Account No. 13-4500, Order No. 4024-4011US2. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.**

Respectfully submitted,

MORGAN & FINNEGAN, L.L.P.



By:

Richard Straussman

Registration No. 39,847

Dated: April 2, 2004

Correspondence Address:
MORGAN & FINNEGAN, L.L.P.
345 Park Avenue
New York, NY 10154-0053
(212) 758-4800 Telephone
(212) 751-6849 Facsimile

FORM PTO-1449 INFORMATION DISCLOSURE CITATION				Attorney Docket: 4024-4011US2		Serial No.: To Be Assigned	
				Applicant: Keith Kang and John Trezza			
				Filing Date: April 2, 2004		Group Art Unit: To Be Assigned	
U.S. PATENT DOCUMENTS							
Examiner Initial	Patent Number	Issue Date	Name	Class	Sub-Class	Filing Date	
	3,825,318		Croset et al.			August 10, 1972	
	4,230,385		Ammon et al.			February 6, 1979	
	4,744,627		Chande et al.			November 3, 1986	
	4,966,432		Okada et al.			October 30, 1990	
	5,175,928		Grabbe			January 5, 1993	
	5,214,730		Nagasawa et al.			May 7, 1992	
	5,259,052		Briggs et al.			February 11, 1991	
	5,379,361		Maekawa et al.			January 3, 1995	
	5,400,429		Ames et al.			August 8, 1994	
	5,473,716		Lebby et al.			December 5, 1995	
	5,579,426		Li et al.			November 26, 1996	
	5,613,024		Shahid			December 21, 1995	
	5,664,039		Grinderslev et al.			September 2, 1997	
	5,671,311		Stillie et al.			October 9, 1996	
	5,743,785		Lundberg et al.			April 4, 1996	
	5,761,350		Koh			June 2, 1998	
	5,853,626		Kato			October 15, 1997	
FOREIGN PATENT DOCUMENTS							
Examiner Initial	Patent Number	Publication Date	Country	Class	Sub-Class	Translation	
OTHER DOCUMENTS							
Ayliffe, M.H., "Optomechanical, electrical and thermal packaging of large 2D optoelectronic device arrays for free-space optical interconnects", <i>SPIE</i> , Vol. 3490, pages 502-505.							

Examiner	Date Considered
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP §609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.	

Express Mail Label No. EU064955102US

FORM PTO-1449 INFORMATION DISCLOSURE CITATION	Attorney Docket: 4024-4011US2	Serial No.: To Be Assigned
	Applicant: Keith Kang and John Trezza	
	Filing Date: April 2, 2004	Group Art Unit: To Be Assigned

U.S. PATENT DOCUMENTS

Examiner Initial	Patent Number	Issue Date	Name	Class	Sub-Class	Filing Date
	6,174,424		Wach et al.			January 16, 2001
	6,324,316		Fouquet et al.			April 14, 2000
	6,379,053		van Doorn			May 30, 2000
	6,442,306		Dautartas et al.			December 21, 1999
	6,246,813		Zheng			Mach 1, 1999
	6,292,529		Marcovici et al.			September 18, 2001
	6,328,482		Jian			December 11, 2001
	Pub. No. US2001/0051026		Steinberg et al.			December 13, 2001

FOREIGN PATENT DOCUMENTS

Examiner Initial	Patent Number	Publication Date	Country	Class	Sub-Class	Translation

OTHER DOCUMENTS

	Basavanhally, N.R. et al., "Optoelectronic Packaging of Two-Dimensional Surface Active Devices", <i>IEEE Transactions On Components, Packaging, And Manufacturing Technology - Part B</i> , Vol. 19, No. 1, pages 107-114, 1996.
	Boisset, G.C. et al., "On-Die Diffractive Alignment Structures for Packaging of Microlens Arrays with 2-D Optoelectronic Device Arrays", <i>IEEE Photonics Technology Letters</i> , Vol. 8, No. 7, pages 918-920, July 1996.
	Cryan, C.V., "Two-dimensional multimode fibre array for optical interconnects", <i>IEEE Electronic Letters Online No.</i> 19980073, October 23, 1997.
	Giboney, K.S., "Parallel-Optical Interconnect Development at HP Laboratories", <i>SPIE</i> , Vol. 3005, pages 193-201, February 1997.
	Hall, J.P. et al., "Packaging of VCSEL, MC-LED and Detector 2-D Arrays", Electronic Components and Technology Conference, pages 778-782, 1998.

Examiner	Date Considered
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP §609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.	

Express Mail Label No. EU064955102US

FORM PTO-1449 INFORMATION DISCLOSURE CITATION	Attorney Docket: 4024-4011US2	Serial No.: To Be Assigned
	Applicant: Keith Kang and John Trezza	
	Filing Date: April 2, 2004	Group Art Unit: To Be Assigned

OTHER DOCUMENTS (continued)

	Hayashi T. and Tsunetsugu H, "Optical Module with MU Connector Interface Using Self-alignment Technique by Solder-bump Chip Bonding", Electronic Components and Technology Conference, page 13-19, 1996.
	Ishida, H. et al., "Two-dimensionally arranged 24-fiber optical connectors", <i>OFC '97 Technical Digest</i> , pages 189-190, 1997.
	Jöhnck M. et al., "8X* Pof Based Interchip Interconnection with 2.5 Gbit/s Per Channel Data Transmission", ECOC '98, pages 35 and 36, 20-24 September 1998.
	Kosaka, M. et al., "Plastic-Based Receptacle-Type VCSEL-Array modules with One and Two Dimensions Fabricated using the self-Alignment Mounting Technique," IEEE Electronic Components and Technology Conference, pp. 382 – 390 (1997).
	Koyabu, K. et al., "Fabrication of Two-Dimensional Fiber Arrays Using Microferrules", <i>IEEE</i> , pages 11-19, 1998.
	Lee, S.S., et al. "Self-Aligned Integration of 8 x 1 Micromachined Micro-Fresnel Lens Arrays And 8 x1 Vertical Cavity Surface Emitting Laser Arrays For Free-Space Optical Interconnect", <i>IEEE</i> , pages 31.2.1- 31.2.4, 1994.
	Liu, Yongsheng et al., "Design, implementation, and characterization of a hybrid optical interconnect for a four-stage free-space optical backplane demonstrator", <i>Applied Optics</i> , Vol. 37, No. 14, pages 2895-2911, 10 May 1998.
	Maj, T. et al., "Interconnection of a two-dimensional array of vertical-cavity surface-emitting lasers to a receiver array by means of a fiber image guide", <i>Applied Optics</i> , Vol. 39, No. 5, pages 683-689, February 10, 2000.
	McCormick, F.B., "Smart Pixel Optics and Packaging", IEEE/LEOS Summer Topical Meeting: Smart Pickels, pages 45 and 46, August 1996.
	Ohki, A. et al., "Multi-channel optical coupling between VCSEL arrays and multimode optical fibers for a 40-channel parallel optical interconnection module", <i>IEEE</i> , pages 47 and 48, 1998.
	G. Proudley, et al., "Fabrication of two dimensional fiber optic arrays for an optical crossbar switch," <i>Optical Engineering</i> , Vol 33, #2, pp. 627-635, February 1994.
	Sasian, J. et al., "Fabrication of fiber bundle arrays for free-space photonic switching systems", <i>Optical Engineer</i> , Volume 33, No. 9, pages 2979-2985, September 1994.
	Söchtig, J. et al., "Replicated Plastic Optical Components for Optical Micro Systems", <i>IEEE</i> , pages 37 and 38, 1998.

Examiner	Date Considered
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP §609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.	

Express Mail Label No. EU064955102US

FORM PTO-1449 INFORMATION DISCLOSURE CITATION	Attorney Docket: 4024-4011US2	Serial No.: To Be Assigned
	Applicant: Keith Kang and John Trezza	
	Filing Date: April 2, 2004	Group Art Unit: To Be Assigned

OTHER DOCUMENTS (continued)

	Tooley, F., "Challenges in Optically Interconnecting Electronics", <i>IEEE Journal Of Selected Topics In Quantum Electronics</i> ", Vol. 2, No. 1, pages 3-13, April 1996.
--	--

Examiner	Date Considered
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP §609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.	

Express Mail Label No. EU064955102US